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1 RECORD OF ORAL HEARING
2 UNITED STATES PATENT AND TRADEMARK OFFICE

3
4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES
6

7 *Ex parte* PIERLUIGI ORESTI and PIERA AGOGLIATI

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9 Appeal 2011-006394
10 Application 10/594,592
11 Technology Center 1700
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14 Oral Hearing Held: Thursday, March 15, 2012
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17 Before BRADLEY R. GARRIS, ADRIENE LEPIANE HANLON and
18 LINDA M. GAUDETTE, *Administrative Patent Judges*.
19

20 ON BEHALF OF THE PATENT OWNER:

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29 *The above-entitled matter came on for hearing on Thursday,*
30 *March 15, 2012, commencing at 9:59 a.m., at the U.S. Patent and Trademark*
31 *Office, 600 Dulany Street, 9th Floor, Hearing Room A, Alexandria, Virginia,*
32 *before Laurie Beth Allen, notary public.*
33

1 JUDGE GARRIS: Good morning, Mr. Ollis.

2 So, you know you have about 20 minutes to present your case, so
3 please begin.

4 MR. OLLIS: May it please the board. My name is Andy Ollis.
5 I'd like to argue this case, 10/594,592.

6 I'd like to focus on two points today, specifically with respect to
7 Claim 15.

8 The first point is going to be the reliance on the Holmes
9 reference, and the second point will be the prior art teaching in the Office
10 Action that is driven by gas coming off of the injection.

11 Briefly, Claim 15 has three major sections to it, and it relates to a
12 process for the treatment of fluids in a submarine oil field between offshore
13 platforms, and first it recites separating the oil that's coming out into three
14 stages:

15 A high-pressure stage. First, the gas is separated out, and then
16 the oil and water is separated. The gas is then diverted to a recompression
17 unit, and then, after the oil and water -- at least the oil and hydrocarbons
18 liquid is directed towards a second separation stage, it is heated in between
19 those first and second separation stages.

20 Subsequently, the hydrocarbon gases that are separated from the
21 second and third separation stages go through compression units, and those
22 compression units, according to the claim, are compressed using an ejector,
23 and the ejectors are each driven in part by gas.

24 After it goes through the compressor, the two compressors, it
25 goes into the front of the re-injection compression unit.

1 The benefit and the focus of the application is particularly on the
2 use of the ejectors in the compression stage between the separation stages and
3 the re-injection compression unit, and driving those ejectors by gas coming
4 out of the re-injection compression units.

5 So, the Office Action relies on a combination of four references.
6 The first reference, Sands, teaches the three separation stages. Notably, the
7 extra gas that is diverted in Figure 1 at this point is sent off to a pipeline.

8 Next, the Office Action relies on Aarebrot, and Aarebrot is
9 brought in for the purpose of explaining that there are multiple compression
10 stages and adding the re-injection gas compression unit.

11 Aarebrot also provides some context for the gas and the purpose
12 of the re-injection compression unit and explains that there are basically two
13 goals for the gas that goes through the re-injection compression unit.

14 The first is that, of course, you want to maintain the pressure in
15 the reservoir down below, and you want to do that as efficiently as possible.
16 Aarebrot has a particular technique for doing that, teaches that before you put
17 the gas into the re-injection compression unit, you burn it to reduce the
18 oxygen levels, and that's apparently desirable to reduce wear and tear on the
19 equipment and helps provide a more desirable gas to support the re-injection,
20 but it also recognizes that the gas, in general, is desirable or may be desirable
21 and virtual value, and those are the competing demands on this re-injection
22 gas that's coming out of the system.

23 So, the question, the first point that I want to turn to is the third
24 reference that is relied upon by the Office Action, which is Holmes, and

1 Holmes is relied on for specifically heating the liquid hydrocarbons between
2 the first separation stage and the second separate stage.

3 Now, before we get to why Applicant's perspective is the
4 references don't, in fact, suggest that heating is adequate, it's helpful to look at
5 a little bit of what Holmes is doing.

6 Holmes is also interested in the re-injection process. It has a
7 different approach for coming up with an improved re-injection process of gas
8 that's been recovered, and in particular, what it does is it starts with the
9 premise that it's very advantageous to send in carbon dioxide gas with a little
10 bit of liquid oil down into the -- to re-inject that, that that's advantageous, and
11 that's really his goal, and so, it has a very particular re-injection gas that it
12 wants to do, to send down.

13 In order to get there, it has a particular process that it sends some
14 of the hydrocarbons that have been recovered through. So, first, it burns
15 some hydrocarbons that have been recovered in order to generate a lot of
16 CO₂, and then that CO₂ that's been generated gets absorbed into a particular
17 oil that's available, after it's cooled, actually, but anyway, it's absorbed into
18 CO₂ oil.

19 Then the oil subsequently is heated but for the purpose of later
20 releasing that CO₂ that we're trying to create for our re-injection gas. But the
21 CO₂ that's being released in this heating step has been specifically added after
22 a burning step, and it's all being done to create the CO₂ stream, with some oil
23 in it, that goes down into the re-injection.

24 So, this is a very separate purpose, and it's completely unrelated
25 to separation stages in the beginning. There's no reason provided by this

1 reference to insert a heating step between the first and second separation
2 stages in the system, and in fact, there are two references.

3 Not only does Sands teach several separation stages, the Choi
4 reference also -- which the Examiner relies on -- also has, in fact, multiple
5 separation stages, and also, there's no heating between the first and second
6 stages there either. They're just valves.

7 So, that seems to be the standard, and because Holmes is directed
8 to such a different problem and has intentionally added carbon dioxide into
9 the oil in the first place, which we're not doing between the first and second
10 separation stages, there's no extra reason to add the heating step in the
11 references that are relied upon by the Office Action.

12 The second point I'd like to focus on -- so, for this reason,
13 Applicants respectfully submit that it was error to -- there's no prima fascia
14 case of obviousness or motivation from the references to insert this heating
15 step as recited in Independent Claim 15.

16 The second point I'd like to focus on is the Office Action
17 discussion of LaGrone and also Choi for the addition of an ejector to the
18 compression unit, and the fact that this ejector is to be driven by gas that is
19 coming off of the re-injection gas compression unit. It's not just any gas.

20 There's a discussion about non-analogous art and art. I'd
21 primarily like to leave that to the briefs. I will not focus on that so much here,
22 and the question is, even if -- even if one might use an ejector -- and in fact,
23 the Office Action points to Choi, and ultimately, later in the prosecution
24 history, as using an ejector in an oil field recovery, and in fact, that ejector is
25 after the separation stages.

1 So, in some ways, I think it's actually a more analogous reference
2 or relevant reference to the discussion, but if you look at Choi, the Choi
3 reference teaches that the -- the ejector is driven primarily by gas from the
4 high-pressure separation stage, that first stream of gas that comes off. It's got
5 the most energy, and it uses the high-pressure gas to essentially compress,
6 further compress the lower pressure gas that comes off of the other lower
7 pressure separators or separation stages, and in fact, there is a similar design
8 put forth by Sands where there is a high-pressure stream available that is not
9 used. It just goes directly to the re-injection stage.

10 So, if one were to make this substitution at all, we would
11 respectfully submit that that would be the more logical way to do it. You
12 have that stream, that's what Choi teaches, and that actually is, unlike
13 LaGrone, which is really dealing with supplying fuels for jet engines,
14 particularly for gas turbine engines but primarily jet engines, Choi, which is
15 the more relevant of the two, teaches that the gas stream power ejectors is
16 coming from a different location in the system, and so, Applicants submit that
17 the prior art as a whole does not teach taking it from the injection
18 compression unit, and in fact, if one looks at Aarebrot, Aarebrot's concerned
19 that, in the modern day, you want to be as efficient as possible, we don't want
20 to lose energy and power and gas, to be able to have the maximum ability and
21 most efficiently as possible to power -- or to maintain the pressure in the
22 reservoir down below, and so, Applicants submit that the references -- first of
23 all, they teach generally that you wouldn't want to touch that stream.

24 They're also specifically treated that stream at the end of the
25 compression re-injection gas compression unit in these references, however

1 you wish to use, burns it off at the beginning, got it all ready to go, then says
2 to send it back in and not to divert it, especially when you have, as Choi itself
3 teaches, a readily available stream of extra power, gas that comes off the high-
4 pressure separation stage.

5 So, for this reason, Applicants submit that if one looks at the
6 teachings of the references as a whole, it doesn't teach -- there's no suggestion,
7 in fact, at all, first of all, to heat between the first and second separation
8 stages, and secondly, we'd again submit, for reasons already stated in the
9 briefs, primarily, that one wouldn't look to LaGrone to add an ejector, but
10 even if you did add an ejector, the ejector would not be driven from the re-
11 injection gas stage, but it might be driven, instead, as taught by Choi, by gas
12 coming off that first high-pressure separator, so -- and in any event, Aarebrot
13 suggests that you don't want to divert that gas from the re-injection gas
14 compression unit.

15 So, I think that's basically all I have. I wanted to focus on those
16 two issues, and I don't know if there are any questions.

17 JUDGE GARRIS: Judge Hanlon, any questions?

18 JUDGE HANLON: No, thanks.

19 JUDGE GARRIS: Judge Gaudette?

20 JUDGE GAUDETTE: No.

21 JUDGE GARRIS: Sir, no questions.

22 MR. KILYK: All right.

23 JUDGE GARRIS: Thank you very much.

24 (Whereupon, at 10:14 a.m., the proceedings were concluded.)

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